ved For Release 2001/08/27 : CIA-RDP79-00798A000400100 DEPARTMENT OF STATE

Washington, D.C. 20520

BUREAU OF INTERNATIONAL SCIENTIFIC AND TECHNOLOGICAL AFFAIRS

U.S.-U.S.S.R. Programs Secretariat

STATINTL

STATINTL

April 29, 1974

NOTE FOR: CIA -

SUBJECT: Briefing 9:39 a.m., May 2, 1974

Following is a list of NSF personnel who have been invited by the U.S. Working Group Chairman on Microbiology to the briefing at 9:30 a.m., May 2, Room 924 of the Foundation, 1800 G Street, N.W.

Dr. Joshua Leise (U.S. W.G.C.) Office of the Deputy Assistant Director for Research

Dr. Eloise V. Clark
Head of the Molecular Biology Section

Dr. Edward C. Creutz Assistant Director for Research

Dr. Jerome Fregeau
Executive Assistant to the Deputy Assistant
Director for Research

Dr. Marshall M. Lih Division of Engineering

Dr. John Mehl
Deputy Division Director
Division of Biological and Medical Sciences

Dr. Richard Ries Office of International Programs

Dr. John Thomas
Office of International Programs

Dr. Edward Todd Deputy Assistant Director for Research

robiology

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Dr. George Tsao Program Manager for Advanced Technology Applications

Dr. Israel Warshaw Deputy Division Director Division of Engineering

I have been informed by Dr. Leise's secretary that all the above have security clearance through Secret.

In addition to the above, Dr. Arthur Humphrey of the College of Engineering, University of Pennsylvania, and Co-Chairman of the U.S. Group, will also attend the briefing. Dr. Humphrey has received, for the day of the briefing, a Secret security clearance from the Department of State.

It is also possible that one or more of the following from this office may attend the briefing: Dr. Oswald H. Ganley, Dr. Royal Wald, All have appropriate security clearance.

and.

Adah Sheldon

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IN FULFILLMENT OF THE WORKING PROGRAM FOR SCIENTIFIC AND TECHNICAL COOPERATION BETWEEN THE U.S.A. AND U.S.S.R. IN THE FIELD OF "PRODUCTION OF SUBSTANCES BY MICROBIAL MEANS"FOR THE PERIOD JANUARY 1, 1974 TO DECEMBER 31, 1974.
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Joint Book Writing	Exchange Visits on Computer Control	Conference on Mechanism of HC uptake by Microbes	Conference on Instrumentation	3rd Meeting Working Group	NT EVENT NAME
· vı	<i>1</i> 0	σ	, 01	10	NUMBER OF PARTICIPANTS USSR USA
″ თ	8	σ.	σ	10	OF PANTS USA
1974	1974-75	Fall 1974	Aug.1974	June 10 to June 20	DATE OF ACTION
Phila., USA in con- nection with event 2	Kazan MIT J. of P. Widener College	Moscow, USSR	Phila., USA	Wash.,D.C.	PLACE
2 Weeks	faculty for 3 months 2 post-doctorals for 1 years	2 weeks	2 weeks	2 weeks	PERIOD OF ACTION
Main Board	Main y Board - als year	Main Board & Inst. Prot. Synth.	Main Board { Kazan Inst.	Main Board	RESPONSIBLE ORGANIZATIONS USSR USA
NSF	NSF	NSF & Kansas State Univ.	NSF & P.	NSF G Dept.of State	IBLE ZATIONS USA
Project 24 Task 6.1	Project Task 4.1 Project Proje	Project ? Task 2.17	Project Task 1.19-007	Recommendation in Control of Mad	REFERENCE BASIS 3

90 9 1-1 • ENT	A0004 0 01	DP79-00798	1/08/27 : CIA⊱R	For Release 2600
EVENT	Research Project on Fermentation Inst.	Research Project on Ferm.Dis-persion	Research Project on Theory of HC Uptake by Microbes	Research Project Development of Systems for Computer Control of Ferm. Systems
NUMBER PARTICI USSR	 	٠ 4	10	10
OF IPANTS USA	4	!	4	∞
DATE OF ACTION	begin July 1,1974	begin July 1,1974	begin July 1, 1974	begin July 1, 1974
PH	4 c	4 7	74	74

Tech.

Kazan Inst.

Main Board

NSF

years

Main

NSF

Board

of Chem. years

Approved F

IN FULFILLMENT OF THE WORKING PROGRAM FOR SCIENTIFIC AND TECHNICAL COOPERATION BETWEEN THE U.S.A. AND U.S.S.R. MEANS"FOR THE PERIOD JANUARY 1, 1974 TO DECEMBER 31, 1974. IN THE FIELD OF "PRODUCTION OF SUBSTANCES BY MICROBIAL

PLACE

ACTION

USSR

USA

RESPONSIBLE ORGANIZATIONS

PERIOD

Univ. of Penna. Mass.Inst.Tech. Kazan Inst.

Chem. Tech.

years

Board

Univ.

Kansas State

Synth. 6

years Board

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Inst.

IN THE FULFILLMENT OF THE WORKING PROGRAM FOR SCIENTIFIC AND TECHNICAL COOPERATION BETWEEN THE U.S.A. AND U.S.S.R. IN THE FIELD OF "PRODUCTION OF SUBSTANCES BY MICROBIAL MEANS" FOR THE PERIOD JANUARY 1, 1974 TO SECEMBER 31, 1974.

7	, c		16	15		14	: -RDP79-00	} -	10	EVE NO.
		Approve	d For Re	lease 2	001/08	3/27 : CIA	-RDP79-00	798A0004	10010001	1-1岩
change of cult & field trips	7.11		g	Laboratory & Field Visits		Fermentable sugar 6 Cleavage reversal	Production of	Enzyme systems	Polimery-74 Conference	EVENT
cultures, rips	1-7	• • • • • • • • • • • • • • • • • • • •	4-7	4-7	t	, σ	sugar f 6	for	0	NUMBER OF PARTICIPANTS USSR USA
Ţ.	- - -		4-7	4-7		from agricultural 6 o produce pentide	sugar from cellulose 6 6	acoustic imaging 4	6	OF IPANTS USA
Dec. 17/4	Begin Sept. 1974	Begin Sept. 1974	July 1974	June 1974	1,	sclid wast July 1, 1974	July 1, 1974	and holography July 1, 1974	Sept. 3-16 1974	DATE OF ACTION
wash.,D.C.	Various Sites	Various Sites	Beltsville, Md	Various Sites	Inst. Biosyn. Protein Sub.	e Inst. Biosyn Protein Sub.	Inst. Biosyn. Protein Sub.	ny U. Pa. Moscow U.	Moscow	PLACE
S Wits.	1 yr.	2 yrs.	3-5 days	3 wks.	Corning Glass	Iowa State Univ.	U. Cal. Berkeley	5 yrs.	2 wks.	PERIOD OF ACTION
Main Board	Main Board	Main Board	Main Board .	Main Board	Main Board	Main Board	Main Board	Main Board	Main Board	RESPONSIBLE ORGANIZATIONS USSR USA
NSF 1	NSF	NSF	NSF	NSF	NSF	HSF	NSF	NSF	NSF	TONS USA
NSF Froject 5	Project	Project	NSF Project	Project 5	Project 4,	Project 4,	Project 4,	Project 4,	Project 4,	REFERENCE BASIS
	У	5	5		Ta	.∓ 8/27 ∰CIA	-RDP∰9-00	798 A 0004	1001 0 001	
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IN FULFILLMENT OF THE WORKING PROGRAM FOR SCIENTIFIC AND TECHNICAL COOPERATION BETWEEN THE U.S.A. AND U.S.S.R. IN THE FIELD OF "PRODUCTION OF SUBSTANCES BY MICROBIAL MEANS" FOR THE PERIOD JANUARY 1, 1974 TO DECEMBER 31, 1974.

28	27	26	25	24	23	22	21	20	IZ 및
Biological Value and Toxicity	Research & on Industri	Research & on Protein	Research & of Biomass	Research on Isolation &	Research or of Yeast ar on Various	Choice &	Conference Work- Shop on SCP Research	Exchange of Publications	NO. E
l Value	earch & Development Industrial Methods Biomass Production	ւ & Development in Isolation	& Development	on Protein n & Release	on Cultivation and Bacteria	oice & Selection Microorganisms	se Work-	of lons	EVENT NAME
	٠.	ı,	1.		n n	. 6	6		
				v			•	* * : *	NUMBH PARTI USSR
2	4	4	. 4	4	. 6	10	. 20	. 1	NUMBER OF PARTICIPANTS USSR USA
Begin July	Begin July 1,	Begin July 1,	Begin July 1,	Begin July 1,	Begin July 1,	Sept. 1974	Sept.	July	NTS
ln 7 1, 1974	in 1974	1, 1974	1, 1974	1, 1974	1, 1974	1974	1974	July 1, 1974	DATE OF ACTION
M.I.T.	M.I.T.	M.I.T	M.I.T., U. Miss	м. г. т.	M.I.T., U. Miss	usa & usbr	Cambridge, Mass. USA	Cambridge U.S.S.R.	PLACE
		· •	[.T., U.Pa. Missouri		[.T., U. Pa. Missouri	USSR	idge, USA	dge &	CE
3 Years	2 Years	2 Years	, 2 Years	2 Years	2	1 Day	3 Days	Continuing	PERIOD OF ACTION
		SI	. B	ω .	Years	. •		ing	
	=			-	-	9		Media	RESPO ORGAN USSR
NSF	NSF	NSF	NSF	NSF	NSF	NSF &	NSF & MIT	NSF & MIT	RESPONSIBLE ORGANIZATIONS USA USA
						& MIT	TIM	TIM	ONS A
Project Task 8	Project Task 6.	Pro Tas	Pro Tasi	Pro Tas	Pro Tasi	Projec Task 3	Project Task 2A	Project Task 1	RE
ect 1	ect 1 6.1,	Project 1 Task 5.1	Project 1 Task 4.2, 4.2,	Project 1 Task 5.1 & 5.2	Project 1 Task 4.1 & 4.2	Project 1 Task 3	Project 1 Task 2A	Project 1 Task 1	REFERENCE
	Project 1 Task 6.1, 6.2, 6.3	δ 5.2	4.2,	5. 22	4.2				H
						76.	·		

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IN FULFILLMENT OF THE WORKING PROGRAM FOR SCIENTIFIC AND TECHNICAL COOPERATION BETWEEN THE U.S.A. AND U.S.S.R. IN THE FIELD OF "PRODUCTION OF SUBSTANCES BY MICROBIAL MEANS"FOR THE PERIOD JANUARY 1, 1974 TO DECEMBER 31, 1974.	MEANS"FOR THE PERI	IN THE FIELD OF "I	AND TECHNICAL COOF	IN FULFILLMENT OF
	IOD JANUARY 1, 1974 TO DECEMBER 31, 1974.	IN THE FIELD OF "PRODUCTION OF SUBSTANCES BY MICROBIAL	AND TECHNICAL COOPERATION BETWEEN THE U.S.A. AND U.S.S.R.	IN FULFILLMENT OF THE WORKING PROGRAM FOR SCIENTIFIC

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34.	(A pr	oroved	For Releas	se 200 <u>4/</u> 08	/27 : CIAARE	OP79-0079	8A 00 0400100	0011-1
Research projects on genetics of non-anti-biotic producing cultures	Annual Conference on research projects (1.3, 1.5)	Research projects on cellulose utilization	Research Projects on genetics of antibiotic producing cultures	Conference on genetics antibiotic producing cultures	Conference on genetics non antibiotic produc-ing cultures		NAME	. MI
ω	ᅜ.	N	3 institu- tions	6	7,		NUMBER OF PARTICIPANTS USSR USA	ANS"FOR
ω ·	ᅜ	N	3 linsti-	6	Si		USA	THE F
1975	Annual	1975	1975 ms	Spring 1975	Spring 1975	. ·	DATE OF ACTION	IN THE FIELD OF "PRODUCTION OF MEANS"FOR THE PERIOD JANUARY 1,
to be determined	Alternating US and USSR	US and USSR	US and USSR	Leningrad	Chicago or Seattle		PLACE	L OF
years	3 days	2 years	3 years	3 days	2 days		PERIOD OF ACTION	SUBSTANCES BY MICROBIAL 1974 TO DECEMBER 31, 1974.
Main Board	Main Board	Main Board	Main Board	Main Board	Main Board	·	RESPONSIBLE ORGANIZATIONS USSR USA	TICROBIAI SER 31, 1
NSF	NSF	NSF & Natick Lab.	NSF	NSF	NSF		SIBLE ZATIONS USA	1974.
Project 3 Task 1.5	Project Projec	Project 30	Project fask 1.3 Refea	Project Task 1.200 708	Project Task 1.0CIA+RI	DP79-00798	REFEREDO 100	

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THE CELL	ICAL
PERIOD	COOPER.
DUCTION OF JANUARY 1	ATTON RETU
SUBSTANCE 1, 1974 TO	PROGRAM FO
IN THE FIELD OF "PRODUCTION OF SUBSTANCES BY MICROBIAL MEANS"FOR THE PERIOD JANUARY 1, 1974 TO DECEMBER 31, 1974.	AND TECHNICAL COOPERATION RETWEEN THE H CANTIFIC
).S.S.R.)BIAL 31, 1974.	FIC

41.	Approve	ed For Re	lease 20	001/08/27	CIA-RDP	79-00798	A00040010	0001 1
Research project on B. thuringiensis and B. popilliae	Research projects on genetics of insect pathogens	Conference on gene- 8 tics of insect patho gens	Workshop on insect control	Research projects in genetic engineering and molecular biology	Conference on genetic engineer- ing	Exchange of per- sonnel in genetic : research projects		
بط	ω	· &	51	n 3	` Vī	9	NUMBER OF PARTICIPANTS USSR USA	MEANS"FOR THE
٢	ω	5	20	ω	5	6	OF IPANTS USA	R THE
Spring 1975	Spring 1976	Spring 1975	Oct. 1974	Spring 1976	Spring 1975	1 from each country for 12 months	DATE OF ACTION	PERIOD JANUARY 1,
Manhatan, Kans, & Armenia	US & USSR	Armenia	East Lansing, Mich.	US & USSR	Stanford	US & USSR	PLACE	ARY 1, 1974
1 year	3 years	3 days	g, 3 days	3 years	4 days	3 years	PERIOD OF ACTION	1974 TO DECEMBER 31, 1974.
Main Board	Main Board	Main Board	Main Board	Main Board	Main Board	Main Board	RESPON ORGANI USSR	BER 31,
NSF	NSF	NSF	NSF	NSF	NSF	NSF	RESPONSIBLE ORGANIZATIONS USSR USA	1974.
Project 3	Project 3prove	Project 3r Red For Re	Project ase 20	Project Project 1.701/98/27	Project RDP	Project 0979	REFERMONO 10	00011

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#5	5 6	Approve	ed For R	ease 20€	1/08/2	CIA-ROP	79-00798	A0004601	00011-1
Research projects on genetic analysis in bacillus		Conference on research projects	Exchange of personnel in yeast genetics programs	Research project on genetic analysis	Research project on	Conference on mutagenesis and recombination	Conference on research projects (2.3)		
Ň	N	w	ω	N	Н	.10	4	NUMBER OF PARTICIPANTS USSR USA	IN THE FIELD MEANS"FOR THE
'n	۲	ω	ω	N	Н	Vi	#	OF LPANTS USA	THE
Fall 1974	Fall 1974	Annual	1 from each country for 12 months	Fall 1974 & Spring 1975	Spring 1975	Spring 1975	Spring 1977 1978	DATE OF ACTION	OF "PRODUCTION OF SUBSTANTE PERIOD JANUARY 1, 1974
Waltham, Mass. 3 Rochester, NY Moscow & Armenia	Chicago & Armenia	Alternating US & USSR	US & USSR	Waltham, Mass Leningrad & Moscow	Berkeley & Leningrad	Leningrad	US & USSR	PLACE	ION OF SUBS
• 3 years enia	3 years	3 dаув	3 years	ss. 3 years	3 years	4 days	2 days	PERIOD OF ACTION	SUBSTANCES BY MICROBIAL , 1974 TO DECEMBER 31, 1974
Main Board	Main Board	Main Board	Main Board	Main Board	Main Board	Main Board	Main Board	RESPOI ORGANI USSR	AND U.S MICROBI BER 31,
NSF	NSF	NSF	NSF	NSF	NSF	NSF	NSF	RESPONSIBLE ORGANIZATIONS USSR USA	S.R. AL 1974.
Project 3 Task 4.2	Project 3 Task 4.1	Project 3 Task 3.2 &	Project 3 Task 3.2 &	Project 3 Task 3,3	Project 3 Task 3.2	Project 3 Task 3.1	Project 3 Task 2.3	REFERE BASTAGO04001	· •
		Approve	ed For Rel	ease 200)1/08/27 : -	: CIA-RDP	79-0079	A 6004001	00011-1

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Symposium on genetic 2 methods to be published in book	Conference on research projects (4.1 & 4.2)	Exchange of personnel (4.1 & 4.2)	EVENT	
සු . වර වර	w	ω	NUMBER OF PARTICIPANTS USSR USA	IN FULFILLME AND TECHNICA IN THE FIELD MEANS"FOR TH
1979	Annual	1 from each country for 12 months	DATE OF ACTION	NT OF THE WORL COOPERATION OF "PRODUCTI E PERIOD JANU
US or USSR 1 week	Alternating 3 days US & USSR	US & USSR 3 years	PLACE PERIOD OF ACTION	IN FULFILLMENT OF THE WORKING PROGRAM FOR SCIENTIFIC AND TECHNICAL COOPERATION BETWEEN THE U.S.A. AND U.S.S.R. IN THE FIELD OF "PRODUCTION OF SUBSTANCES BY MICROBIAL MEANS"FOR THE PERIOD JANUARY 1, 1974 TO DECEMBER 31, 1974.
Main NSF Board	Main NSF Board		RESPONSIBLE ORGANIZATIONS USSR USA	SCIENTIFIC A. AND U.S.S.R. BY MICROBIAL CEMBER 31, 1974.

REFERENCE BASIA Project 3 3794.2 Project 3 RDP794.2 Project 3 RDP794.2 Project 3 Task 4.3 Approved For Release 2001708/27 :

(summary

Means,	WORKING PROGRAM and	De
Means, Including Research into Different Aspects of loxicity	WORKING PROGRAM and Utilization of Food and Feed Proteins by Microbial	Development of Technology for Industrial Production

TCT lile and Biological Value of Such Products

PROJECT NO. PROJECT COORDINATOR Dr. Gregorian, U.S.S.R. and Dr. Daniel I.C. Wang, M.I.T., U.S.A

2.4	. •.	2 •	•		2.2		2.1	2A	н	TASK
4 Methods of Decreasing Nucleic Acid Content		Single-Cell Protein For Food	•	onpartace of second	Selection of Microbe *		Biological Value and Toxicity.	ARRANGE WORK-SHOP MEETINGS ON SING	Exchange of Gregorian Publications	NAME OF PARTASK OR AND COOPERATING U.S.S.R.
A.J. Sinskey, M.I.T. Fall, 1974 S.R. Tannenbaum, M.I.T.	C. Atkins, Std. Ind. C. Atkins, Std. Ind. C. Rha, M.I.T. M. Milner, UN (PAG) T. Labuza, Univ. Minn.		J. Litchrield, backers E. Field, Std. Ind. A. Humphrey, U. of Pa. G. Tsao, N.S.F.	C.L. Cooney, M.I.T. C. Dunlap, U. Missouri A. Laskin, Esso C. Wilke, U. Calif.	D.I.C. Wang, M.I.T. Fall, 1974	N. Scrimshaw, M.1.1. B. Oser, F & D Res. Lab. D. Calloway, U. Cal		ON SINGLE-CELL PROTEIN RESEARCH (PART A) TOTAL: 20 U.S. PART, AND 6 U.S.S.R. PART DURATION: 3 DAYS	D.I.C. Wang July, 1974 and M.I.T. continuing	NAME OF PARTICIPANTS COOPERATING INSTITUTIONS COOPERATING U.S. TASK TASK
Meet in U.S.A.		Meet in U.S.A.			Meet in U.S.A.		Meet in U.S.A.	a a a a a a a a a a a a a a a a a a a	Exchange of Publications and Conference Reports	FORMS OF COOPERATION
	•	, 			. =	Cooperative Progra	Planning, Initiati and Reporting on		Establish and Continue Basis of communication	EXPECTED RESULTS

Nucleic Acid Content

		PROJECT NO. 1		
PROJECT				
PROJECT COORDINATOR Dr. Gregorian, U.S.S.R. and Dr. Daniel I.C. Wang, M.I.T., U.S.A.	Toxicity and Biological Value of Such Products	FTO TECT TILE Means, Including Research into Different Aspects of	and Utilization of Food and Feed Proteins by Microbial	WORKING PROGRAM Development of Technology for Industrial Production

2.4	2.3	2.2	٠	2.1	28	TASK
2.4 Methods for Decreasing	Single-Cell Protein for Food	Selection of Microbe- Substrate Systems	and Toxicity	Biological Value	ARRANGE WORK-S	NAME OF TASK OR SUB-TASK
creasing	otein	icrobe-	•	ue	HOP MEETINGS ON SI	NAME OF P. AND COOPERATI U.S.S.R.
S.R. Tannenbaum, M.I.T.	C. Rha, M.I.T. M. Milner, UN (PAG)	D.I.C. Wang, M.I.T. E. Field, Std. Ind.		N.S. Scrimshaw, M.I.T.	ARRANGE WORK-SHOP MEETINGS ON SINGLE-CELL PROTEIN RESEARCH (PART 2) TOTAL: 20 U.S.S.R. PART & 6 U.S. PART DURATION: 3 DAYS	NAME OF PARTICIPANTS AND COOPERATING INSTITUTIONS U.S.S.R. U.S.
.T. Fall, 1975	Fall, 1975	Fall, 1975		.T. Fall, 1975	RCH (PART 2)	DATE AND DURATION OF TASK
Meet in U.S.S.R.	Meet in U.S.S.R.	Meet in U.S.S.R.	· .	Meet in U.S.S.R.		FORMS OF COOPERATION
	٠					ᄧᅋ

WORKING PROGRAM and Utilization of Food and Feed Proteins by Microbial PROTECT TUTLE Means, Including Research into Different Aspects of Toxi-

PROJECT NO.

PROJECT COORDINATOR Dr. Gregorian and Dr. Wang

	4.3	4.2	4.1	4	ω .>		ω Ή	ω		TASK
	·	Cultivation o on Methanol, Agricultural	Cultivation on Molasses, Methanol, Hyd With Techno-L Analysis	RAW MATERIAL A	Regulation Amino Acid		Selection of Bacterial and Yeast Culture	CHOICE AND SE		NAME OF TASK OR SUB-TASK
	Basic	f Bacteria Ethanol,	of Yeast Ethanol, Procarbons, Economic	RAW MATERIAL AND ECONOMIC ANALYSIS OF	and Control Content of SCP	•	1	CHOICE AND SELECTION OF MICROORGANISMS	. WC	NAME OF I AND COOPERAT: U.S.S.R.
	M.I.T. U. of Pa. U. Missouri	G. Dunlap U. Missouri (Cellulosics)	D.I.C. Wang, M.I.T. (Hydrocarbons) C.L. Cooney, M.I.T. (Methanol) A.E. Humphrey U. of Pa. (Molasses)	YSIS OF SCP PRODUCTION	A.L. Demain, M.I.T. S.R. Tannenbaum, M.I.T.	M.I.T. Univ. of Wis. L.S.U.	R. Donovick, ATCC NRRL Cult. Coll. G. Silverman, U.S. Natick	RGANISMS	WORKING PROGRAM OF SIX PROB	NAME OF PARTICIPANTS COOPERATING INSTITUTIONS J.S.S.R. U.S.
	One Week Fall, 1975	Two Years (197;-1976) U. of Missouri	Two Years Ex (1974-1976) Two Years (1974-1976) Two Years (1974-76) (U. of Pa.)	٠.	Fall, 1974 I Day and Continuing		Fall, 1974 and Continuing		SIX PROBLEM TOPICS	DATE AND DURATION OF TASK
J COOK Fait.	Conference to Discuss Progress, Analysis of Results From 4.1 & 4.2 at M.I.T. USA- 5 USA Part.	Exchange of Reports	Exchange of Reports		Meet in U.S.A. Exchange of Exist- ing Research Re- sults		Microbial Culture Exchange		٠.	FORMS OF COOPERATION
	Conference to Dis- Establish Status cuss Progress, Analy- on Raw Material sis of Results From Best Suited With 4.1 & 4.2 at M.I.T. Optimistic Ecous Conference to Dis- Raw Material States on Raw Material Sta	ixi	Forect Specifically cally subst SCP P		Review Past Progress and Establish New Techniques		Establish and Broaden Existing Cultures			RESULTS

WORKING PROGRAM and Utilization of Food and Feed Proteins by Microbial

PROJECT TITLE Toxicity and Biological V

PROJECT COORDINATOR Dr. Gregorian and Dr.

PROJECT NO.

	•				•			
6.4	6.3	6.2	6.1	6	5. 2	5.1	(r	TASK
4 Elaboration on Increased Capacity (Scale-up) For Biomass Purification and Production; Overall Process Evlauation; Economic Analysis	3 Purifying &	2 Biomass Recovery	L Fermentor Apparatus Design & Scale-up	DEVELOPMENT OF INDUSTRIAL METHODS OF BIOMASS PRODUCTION	Development of Techniques For Reduction of Nucleic Acids By Enzymatic & Physico- Chemical Means	Development of Enzymatic & Mechani- cal Methods of Protein Release	DEVELOPMENT OF METHODS FOR PROT	NAME OF TASK OR SUB-TASK U.S.S.R.
D.I.C. Wang, M.I.T. T. Labuza, U. Minn.	T. Labuza, U. Minn.	D.I.C. Wang, M.I.T.	D.I.C. Wang, M.I.T.	S OF BIOMASS PRODUCTION	A.J. Sinskey, M.I.T. S.R. Tannenbaum, M.I.T.	D.I.C. Wang, M.I.T. (Release)	FOR PROTEIN ISOLATION FROM UNICELLULAR MICROORGANISMS	PARTICIPANTS CING INSTITUTIONS U.S.
2 Months Fall, 1977	Two Y_ars (1974-1976)	Two Years (1974-1976)	Two Years (1974-1976)		Two Years (1974-1976)	Two Years (1974-1976)	LULAR MICROORGA	DATE AND DURATION OF TASK
Work-shop with Specific Processes 5 US Part.; 5 USSR Part. Meet in USSR	Exchange of Reports	Exchange of Reports	Exchange of Reports		Exchange of Research	Exchange of Research Report	NISMS	FORMS OF COOPERATION
Establish Techno- Economic Basis for Scale-up of Biomass Purification & Production	Establish & Process	Define Process Parameters for Most Economical Means of Biomass Recovery	Establish Report on Fermentor Design Most Optimal for SCP Cultivation		Information Exchange and Establish Technical and Economic Feasibilities	Information Ex- change to Establish Technical and Economic Feasibili-, ties		EXPECTED RESULTS

PRCJECT TITLEand Biological Value of Such Products WORKING PROGRAM Utilization of Food and Feed Proteins by Microbial

PROJECT NO.

PROJECT COORDINATOR Dr. Gregorian, U.S.S.R. and Dr. Daniel I.C. Wang, M.I.T.

*		,	. 7	7	TASK
		, 10	7.1		贸
A. A	BIOLOGICAL VALUE AND TOXICITY	7.2 Protein Utilization in Preparation of Foods	Protein Isolation, Characterization of SCP	SPECIAL TREATMEN	NAME OF TASK OR SUB-TASK
A.A. Pokrovsky Nutrition Institute	AND TOXICITY		*	SPECIAL TREATMENT OF BIOMASS AND ISOLATED PROTEIN THEREFROM FOR USE IN PREPARATION OF FOODS	NAME OF PARTICIPANTS AND COOPERATING INSTITUTIONS U.S.S.R. U.S.
N.S. Scrimshaw, e M.I.T.		T. Labuza, U. Minn.	C. Rha, M.I.T.	OLATED PROTEIN THERE	ICIPANTS INSTITUTIONS U.S.
Three Years (1974-1977)		Two Years (1975-1977)	Two Years (1975-1977)	FROM FOR USE IN P	DATE AND DURATION OF TASK
Exchange of Reports		Exchange of Research Reports	Exchange of Research Reports	REPARATION OF FOODS	FORMS OF COOPERATION
Establish Safety of SCP		Establish Protocol & Potential Routes of Prepared Foods From SCP	Definition of Protein Isolation & Characterization of Isolated SCP		EXPECTED RESULTS

WORK ING PROGRAM

Project No. 2

PROJECT TITLE: Engineering Research and Development of Equipment and Methods for the Computerized Simulation, Design and Control of Processes for Microbial Technology

PROJECT COORDINATORS: Dr. Shamil Yenikevev. Kazan Institute Chemical Technology

		Dr. Arthur Humphrey, University of Pennsylvania	nnsylvania	
	NAME OF	NAME OF PARTICIPANTS	DATE AND	FORMS OF
TASK	TASK OR	AND COOPERATING INSTITUTIONS	DURATION OF	COOPERATION
NUMBER	SUB-TASK	U.S.S.R. U.S.	TASK	

Development of techniques and new sensors for measuring the significant variables in microbial processes and assembling equipment for experimental investigations. measurement of microbial mentation relative to Development of Instru-Conference and position mentation relative to Development of Instruactivity (including measurement of biomass mentation relative to Development of Instrumentation paper on needed instruinterface & software) interface & software) (including computer Kazan Inst. Kazan Inst. Yenikeyev Chem. Tech. Yenikeye**v** Humphrey Univ. of Penna. Penna. Univ. of Humphrey Penna. Univ. of Humphrey two years. 1974-1976 two years 1974-1976 two years 1974-1976 summer 1974 one week 5 USSR part. 5 US part. conference research exchange exchange exchange of of Penna. at Univ. two man years reports research two man years reports research) e O H developmen t ment & theory equipment equipment developequipment needed paper on mentation instruposition RESULTS EXPECTEL

interface & software) dispersion (including measurement of system

Chem. Tech.

reports

ment developheterogeneous gas-liquid-liquid fermentation

creation of a hydro-dynamical model of the

WORKING PROGRAM

Project No.

2.3	2.2	2. 1	2	TASK: NUMBER	PRC	PRC
Development of experi- mental apparatus and taking of data for creation of a hydro-	Development of hydro- dynemical theory for heterogeneous gas- liquid-liquid microbial culture	Conference on mecha- nisms of hydrocarbon uptake by micro- organism	Investigation of momentum, of culture condition	NAME OF TASK OR SUB-TASK	PROJECT COORDINATORS:	PROJECT TITLE:
experi- us and for	E hydro- ory for gas- microbial	necha- barbon	entum,	AND	Dr. Shamil Dr. Arthur	Engineerin Computeriz Technology
Yenikeyev Kazan Inst. Chem. Tech.		? Inst. Procein Synth. USSR	heat, and mass transfer in heterogeneous gas-liquid-liquid type	NAME OF PARTICIPANTS U.S.S.R. U.S.	Shamil Yenikeyev, Kazan Institute Chemical Technology Arthur Humphrey, University of Pennsylvania	Engineering Research and Development of Equipment and Methods for the Computerized Simulation, Design and Control of Processes for Microbial Technology
	Erickson Kansas State Univ.	Erickson Kansas State Univ.	sfer in hetero		n Institute Cl rsity of Penn	evelopment of esign and Cont
two years 1974-1976	two years 1974-1976	one week fall 1974	geneous gas-1	DATE AND DURATION OF TASK	nemical Techno sylvania	Equipment and trol of Proces
exchange of research results	exchange of research reports	conference at Inst. Prot. Synth. Moscow, USSR 5 USSR part. 5 US part.	iquid-liquid t	FORMS OF COOPERATION	ology	l Methods for t
equipment develop. (theory	Report on status & theory of EC uptake by mi- crobes	уре	EXPECTED	100044	che pial

ω .ω

Conference to integrate results of tasks 1, 2 and 3 and to assist in the

population behavior in a a model for microbial

heterogeneous system

demonstration unit (at design of the experimental

Kazan Inst. Chem. Tech.

Synthesis Yenikeyev

Penna. Erickson Kansas State Univ.

Univ. of Humphrey

summer 1976 one month

conf. on equip. design

working

computer control appl.

Inst. Prot.

Inst. Protein Synth.

Project No. 2

3 . 2	3.1	.	TASK NUMBER	PRO	PRO
Development of experimental apparatus and taking of data for creation of	Development of a kinetic theory for behavior of microbes in a heterogen- ous system	Research on microbial population dynamics of heterogeneous	NAME OF TASK OR SUB-TASK	PROJECT COORDINATORS:	PROJECT TITLE:
perimen- taking ion of	kinetic or of erogen-	l populat:	. AI	Dr. Sham Dr. Arth	Engineerin Computeriz Technology
Yenikeyev Kazan Inst. Chem. Tech.		ion dynamics of	NAME OF PARTICIPANTS AND COOPERATING INSTITUTIONS U.S.S.R. U.S.	il Yenikeyev, k ur Humphrey, Ur	ing Research ar ized Simulatior gy
	Erickson Kansas State Univ.		IICIPANTS INSTITUTIONS U.S.	Dr. Shamil Yenikeyev, Kazan Institute Chemical Technology Dr. Arthur Humphrey, University of Pennsylvania	Engineering Research and Development of Equi Computerized Simulation, Design and Control Technology
two years 1974-1976	two years 1974-1976	systems	DATE AND DURATION OF TASK	Chemical Techn nsylvania	}- 1-
exchange of research reports	exchange of research reports	,	FORMS OF COOPERATION	lology	pment and Methods for the of Processes for Microbial
of a model for 8/27	model develop- ment	00798A	EXPECTED CARESULTS	100011-1	the bial

	•	•				
	4.2	4.1		TASK NUMBER	PRC	PRC
. •	Investigation on both the theoretical and practical aspects of computer control of fermentation systems	Exchange visits in order to coordinate the plans for the computer coupled fermentation control systems	Development of Engineering techniques for optimal design o and automatic control of industrial fermentation processes	NAME OF TASK OR SUB-TASK	PROJECT COORDINATORS:	PROJECT TITLE:
	and soff of tems	in nate he d	neering tec	AND	Dr. Shamil Dr. Arthur	Engineering I Computerized Technology
	Yenikeyev Kazan Inst. Chem. Tech.	Yenikeyev Kazan Inst. Chem. Tech.	techniques for opt: dustrial fermentat	NAME OF PART COOPERATING U.S.S.R.	Yenikeyev, Humphrey, l	g Research and ed Simulation,
	Cooney-Mass, Inst, Tech, Humphrey Univ. of Penna.	Humphrey Univ. of Penna. Cooney-Mass. Inst. Tech. Jefferis Widener College	for optimal design of exmentation processes	ONS	Kazan Institute C University of Penn	Development of Equ Design and Contro
.•	1974-1976 two men years M.I.T. one man year U. of P.	two men (each side) exchange visits one at post- doctoral level for one year, one at faculty level for three months	industrial scale	DATE AND DURATION OF TASK	Chemical Technology ınsylvania	uipment l of Pro
	exchange of results and exper- ience	exchange visits	le fermentor	FORMS OF COOPERATION	logy	thods for for Micr
Appro	knowledge e in compu- as ter controle systems Rplus soft-Rplus soft-rware development e opment	informa- tion exchange exchange 2001/08/27 : CIA-RDP79	-00798Δ4	EXPECTED RESULTS	00011-1	the obial
	w		JULOUM	~	JUJ 1 1-1	

PR	PROJECT TITLE:	Engineering Research and Development the Computerized Simulation, Design Microbial Technology	earch and Deve d Simulation, l ology	of and	Equipment and Methods for Control of Processes for	ods for es for
PR	PROJECT COORDINATORS:	Dr. Shamil Yeni Dr. Arthur Hump	Yenikeyev, Kazan Institute Humphrey, University of Per		Chemical Technology unsylvania	
TASK	NAME OF TASK OR AND SUB-TASK	NAME OF PARTICIPANTS COOPERATING INSTITUTIONS U.S.S.R.		DATE AND DURATION OF TASK	FORMS OF COOPERATION	EXPECTED RESULTS
4. S	Investigation of both the theoretical and practical aspects of computer control of fermentation systems	Yenikeyev- Kazan Inst. Chem.Tech.	Coony-M.I.T. Humphrey- U. of Penn.	1974-1976 two men years M.I.T. one man year U. of P.	exchange of results and experience	knowledge in computer control systems plus software development
نان	Design and demonstration of practical system for computer control of the production of single cell protein from hydrocarbon substrates	f practical system for computer control o cell protein from hydrocarbon substrates	em for compute om hydrocarbon		fermentation system for	tem for
сл ; ;	Conference to coordinate total design information	Yenikeyev- Kazan Inst. Chem.Tech. ? Inst.Protein Synth.	Humphrey- U. of P. Erickson- Erickson- Kansas State Cooney-M.I.T. Jefferis- Widener Univ.	two weeks Fall 1976 U.	conference with key people in attendance approx.5 from each side	specification of final design & tria runs
5. 2	Design and Construction of the computer controlled fermentation unit	? Inst. Protein Synth.		one year 1976-1977	Consultation on design and construction	optimally designed practical compute controlled fermentor

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WORKING PROGRAM

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No

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6.3	6.2	6.1	6		TASK NUMBER	PROJ	PROJ
Editing and Publishing of Book	Writing of individual Chapters	Meetings to plan & outline joint book	JOINT WRITING AND PUBLISHING OF BOOK ON	Demonstration of optimal control of SCP fermentation through use of computer	NAME OF TASK OR SUB-TASK	PROJECT COORDINATORS:	PROJECT TITLE:
Yenikeyev- Kazan Inst.Chem. Inst.	Yenikeyev- Humphrey- Kazan Inst.Chem. U. of P. Inst.	Yenikeyev- Kazan Inst.Chem. Tech.	ISHING OF BOOK ON	? ät:appropriate site in USSR	NAME OF PARTICIPANTS AND COOPERATING INSTITUTIONS U.S.S.R. U.S.	Dr. Shamil Yeni Dr. Arthur Hump	Engineering Research and Development the Computerized Simulation, Design Microbial Technology
<pre>Humphrey - U. of P:</pre>	Humphrey- U. of P.	Humphrey- . U. of P.	COMPUTER SIMULATION, FERMENTATI		IPANTS STITUTIONS U.S.	keyev, Kazar hrey, Univer	earch and De d Simulatior ology
. 1976	1974-1976	Summer 1974 in connection with task 1.1		Summer 1978	DATE AND DURATION OF TASK	Shamil Yenikeyev, Kazan Institute Chemical Arthur Humphrey, University of Pennsylvania	of and
Editing book in both Russian and English	Exchange and criticism of Chapters	Planning of joint book	DESIGN & CONTROL OF ON SYSTEMS	Consultations	FORMS OF FOR	e Chemical Technology ennsylvania	Equipment and Methods for Control of Processes for
Jointly Published Book	Book manu- script	Book outline & chapter assignments		optimal SCP process	EXPECTED RESULTS		ods for es for

PROJECT TITLE Genetics of Industrial Microorganisms

PROJECT COORDINATORSDr. Halvorson and Dr. Brown, USA and Dr. S. Alikhanian, USSR

Appr	oved For Release 2001/08/27	: CIA-RDP79-0079	8A000400 1 00011-1
food food	t -23	io H	8A000400 1 0001 <u>1</u> -1
Genetics of Andi		Conference to	MANG OF MASK OR SUB-MASK- Development of Conference to
Andibiotic producing cultures see 1.2	G.T. Gausse Institute of New Antibiotics, Poscoy I. Tereshin Institute of Antibiotics, Leningrad G. Navachin Institute of Antibiotics, Moscow	Eenetics & stion of in- ction of in- risl micro- nisms	NAME OF PARTICIPANTS AND COOPERATING INSTITUTE U.S.S.R. U.S. genetic methods for improving develop plans on genetics of n
© 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	A. Demain, MIT D. Perleyn, School of Fuarmacy, U. of Misconsin, Madison V.R. From, Squibb & Company G. Bradley Medical college of Virginia, Richmond		ONS industrial on antibio
3 years 1975 - 8	2-3 days 1975 ol of on ob	either ASM or annual	DA DURA croorga produc
Exchange of results and personnel. 3 man years USSR 3 man years USA	Conference	5 USSR part. 5 USA part.	TE AND EXPECTA FORMS OF RESULT COOPERATION COOPERATI
Increased coro- duction of antibiotics	projects projects oved For Release 2001/08/27	projects con-	EXPECTION RESULTS Lecular biology. Lecular biology.

PROJECT COORDINATORS

Pหมสตา TITL's Genetics of Industrial Microorganisms Dr. Halvorson and Dr. Brown, USA and Dr. S. Alikhanian, USSR

Арр	orove	d For Release	2001/	08/27 : CIA	RDP79-00798	A0004001	00011-1
	1.7	,	, t.6	1.5		1. (Con	TASK
	Use of genetic		Conference on (Genetics of no		1. (Continued) 1.4 Development of	NAME OF TASK OR SUB-TASK
M.F. Shemyakin Institute of Mole-	genetic engineering and molecular biology	V.W. Krylov Institute of Gene- tics & Selection of Industrial Micro- organisms, Moscow	on genetic engineering	of non antibiotic producing cultures	L. Erokiid, ? Moscow	of improved methods for cellulose utilization	NAME OF PARTICITANTS AND COOPERATING INSTITUTI U.S.S.R. U.S.
P. Wensink Brandeis U.,	for	P. Berg - Stanford ro-		cultures	M. Mandels Natick, Mass	cellulose uti liz at io n	RTICIPANTS INSTITUTIONS U.S.
3 years 1976	strain development	3-4 days 1975-6 Stanford		2-3 years start- ing 1975-6	2 years 1975-6		DATE AND DURATION OF TASK
Coordinated re- search projects		Conference 5 USSR in conjunction with an international meeting		Specific research projects Exchange of information	Exchange of reports strains 2 man years USA 2 man years USSR at Post Doc. level		FORMS OF COOPERATION
Improve & development	orove	Exchange of informate in the second of the s	2001/	Coordinating research. Increasat	Improve en-	A0004001	EXPICTIND RESULTS

and Physiology of Microorg., Moscow

V.I. Tanyashin

R. Schleif

Brandeis U., Waltham, Mass.

Inst. of Biochem-

cular Biology,

Waltham, Mass.

systems

on selected model

of selective

systems for microbial

engineering genetic Moscow

Approved For Release 2001/08/27 : CIA-RDP79-00798A000400100011-1

1.7 (Continued) (Continued)

and Physiology of

M.I. Matvienko Inst. of Biochem.

Pouschino Microorgan.,

SUB-TASK

MAILE OF TASK OR

AND COOPERATING INSTITUTIONS U.S.S.R.

DATE AND DURATION OF TASK

FORMS OF COOPERATION

NAME OF PARTICIPANTS

PROJECT COORDINATORS

Dr. Halvorson and Dr. Brown, USA and Dr. S. Alikhanian, USSR

PROJECT NO.

w

PROJECT TITLE Genetics of Industrial Microorganisms

Approved For Release 2001/08/27 : CIA-RDP79-00798A0004001000 11 EXPECTED.

PROJECT NO.

PROJECT TIME Genetics of Industrial Microorganisms

PROJECT COORDINATORS Dr. Halvorson and Dr. Brown, USA and Dr. S. Alikhanian,

USSR

TASICE SUB-TASK OR AND COOPERATING INSTITUTIONS

PROBER SUB-TASK U.S.S.R. U.S.

2 Obevelopment of methods for genetic analysis for insect control of 2.1 Workshop and debeloment. Approved For Release у 10 Physiology and genetics of insect pathogens Ahovian, Armenia Inst. Microbiol M.G. Oganesian Inst. of Genetics Moscow Genetic Lab., I. Domaradsky
Extrachromosome Leningrad of Nuclear Physics, Kostantinov Inst. I.A. Zakharov E. Afrikian & Selection of Industrial Micro-Mich. State E. Lansing, Mich USDA Peoria, Ill. Gerhardt St. Julian 3 days Oct. 1974 3 days 1975 DURATION OF CIN ELLVI TASK 4 20 USA partici. Mich. VII. E. Lansing, Workshop in con-5 USA partici. 8 USSR partici Conference 5 USSR Partici. nection with spores Armenia COOPERATION FORMS OF Planning of research project project Planning of Plann grams RESULTS

Research properties of the properties o information? EXPECTED

Selection of In-

Inst. Genetics & V.V. Sukhodolets

U. of Wisc., R. Hansen

Madison

organ., Armenia

Branch

organ., Moscow dustrial Micro-

Ahoyian, Armenia Inst. Microbio.

Research Center,

Manhatan, Kansas

USDA Grain Marketing

Afrikian

L. Bulla

1 year 1975-6

or senior scien-Postdoctoral

production

Improved toxin

tist exchange

PROJECT NO.

PROJECT COORDINATORS

Dr.

Halvorson and Dr. Brown ,

PROJECT TITLE Genetics of Industrial Microorganisms

SUB-TASK AND COOPERATING INSTITUTIONS U.S.S.R. NAME OF FARTICIPANTS U.S.

MADIE OF

Improved development of insect pathogens participants to be determined by 2.2

hysiology and genetics of Bacillus thuringieness and pocillus popilliae

DURATION OF DATE AND TASK

3 years 1976-9

search support Cooperative re-

improvement

doctoral fellows Exchange of post-

COOPERATION FORMS OF

RESULTIS

EXPROTED

USSR

USA and Dr. S. Alikhanian,

Strain and yiel&

PROJECT TITLE

Genetics of Industrial Microorganisms

PROJECT COORDINATORS Dr. Halvorson and Dr. Brown USA and Dr. S. Alikhanian,

00011-1 1005K 1005K Approved For Release 2001/08/27 Development of genetic methods to improve industrial strains of yeasts, including utilization of hydrocarbons, ယံ ω Ν methanol, etc. Conference on mutagenesis and recombination in yeasts Selection of hydrocarbon utilization yeasts Improved methods for genetic analysis in yeasts SUB-TASK TASK OR NAME OF AND Dept. Genetics, Leningrad U. Dept. Genetics B.V. Simmon Lenigrad U. Leningrad U. Dept. Genetics, S.G. Inge-Vechtomov NAME OF PARTICIPANTS
COOPERATING INSTITUTIONS Inge-Vechtomov R. Mortimer U. Calif., R. Mortimer U. of Calif. Waltham, Mass T. Halverson Berkeley Brandeis U., Berkeley w 3 years 1975-8 4-5 days 1975 DURATION OF years 1975-8 DATE AND TASK 5 USA 10 USSR Conference Leningrad Theory of exchange Postdoctoral Research support exchange Research support postdoctoral COOPERATION FORMS OF meiosis and e sporulation or Appropriation and methods for tion of hydgo-carbon utilging Improved theory yeasts Improved producmutagene**s**is as appli**n**d t strain sp lection EXPECTED RESULTS ဝ

PROJECT NO.

PROJECT TITLE

Genetics of Industrial Microorganisms USA and Dr. S. Alikhanian, USSR

PROJECT COORDINATORS

Dr.

Halvorson and Dr.

Brown,

-RDP79-00798A000400100011-1 Development of methods of genetic analysis of microorganisms for SUB-TASK TASK OR NALE OF AND COOPERATING INSTITUTIONS U.S.S.R. NAME OF PARTICIPANTS the production of amino acids DURATION OF DATE AND COOPERATION FORMS OF Improved spain EXPECTED RESULTE

4.1 Construction of genetic strains for amino acid production Inst. of Genetics M.G. Oganesian J. Shapiro U. of Chicago. 3 years 1974-77 search support Cooperative re-

Development of viruses systems for genetic analysis in Bacillus same, Moscow N.I. Zhdanova

Microorgan., Armenia Selection of Ind.

Chicago, Ill.

Branch

V.V. Sukhodolets

organ., Armenia Select. of Micro-M.G. Oganesian organ., Moscow Inst. Genetics & F. Young Rochester Kochester, N.Y. Cchool, Medical

÷ ω Symposium on Genetic Methods

Summary of projects 1-4

1 week 1979

Final reports projects

on conference

Publish bogproved

For Release 2009

developmen**S**

exchange

Postdoctoral

Approved For Release 2001/08/27

personnel

Exchange of

system

Improved

Joint research projects.

H. O. Halvorson Waltham, Mass Brandeis U.

Select. of Micro-

Inst. Genetics &

3 years 1974-5

PROJECT TITLE Enzyme Applications

PROJECT COORDINATOR G.T. Tsao (U.S.A.)

PROJECT NO. 4

Appro	oved	For Relea	ise 2001/08/ se 2001/08/ s		A-RDP79-00798A0	00400 <u></u>	0100011-1 010001TASK NUMBER
2.4 Equipment		<pre>2.2 Process developm</pre>	Commercial i 2.1 Enzyme i		1.1 Strain selction Mos Ins Ins Nat Tol 1.2 Microbial Physi	Search and i	TASK OR SUBTASK
t design same		development same	isolation and purisolation same	same	Iction Moscov Inst. Inst. Natura Tollir Physiolc	l isolation of enzyme producing cultures	AND COOPERATING
same	same	same	and purification of enzymes same	same	V State Univ. N.S.F. Grantees for Protein Syn. for Chem. of al Prod. Poly. Inst.	strains	INSTITUTIONS
5 yrs.	5 yrs.	5 yrs.	5 yrs.	5 yrs.	es 5 yrs.	of microorganisms and	I. Berezin and K. Kalu DURATION OF TASK
joint projects	joint projects	joint research projects	joint research) projects	joint research projects	exchange and testing to compare strains		Kalunyante (U.S.S.R.) FORMS OF COOPERATION
production	processes and equipments	For Relea	ıse 2001/08/ √	more productive strains 7	to	00400	EXPECTED 11-1

PROJECT TITLE Enzyme Applications

PROJECT NO. 4

•	•	•	•			* * * * * * * * * * * * * * * * * * * *
Approved For Release 2001	/08/27 : C	CIA-RDP79 ♣	9-00798	A00040	0100011 ს	TASK
	4.2 Enzyme detection of Moscow I	Diagnostic and Analytic 4.1 Enzyme-immune essay	3.3 Multienzym	3.2 Carrier se	Immobilized Enzymes 3.1 Theoretical analysis Moscow Ur	NAME OF TASK OR SUB-TASK
	faint Univ.	and Analytical Uses of -immune essay	3.3 Multienzyme and/or cofactor systems same	selection several institutions	and niv.	E OF PARTIC COOPERATIN
Others	light or sound Univ. of Penn. Graves	f Inmobilized Enzymes NSF Grantees	systems same	ions same	modelling N.S.F. Grantees	PROJECT COORDINATOR G.T. IPANTS G INSTITUTIONS U.S.
	5 yrs.	5 yrs.	5 yrs.	5 yrs.	5 yrs.	Tsao, I. DATE AND DURATION O
	joint projects	joint projects	joint projects	joint projects	joint projects)	Berezin & K.A. Kalunyante F FORMS OF COOPERATION
Approved For Release 2001		new CIA-RDP79	processes 798	understand 1040 of new 000	development00011	EXPECTED RESULTS +
•	•					

Approved For Release 2001/08/27: CIA-RDP79-00798A00040Q100百亿

5.4 Cleavage reversal to make peptides and fine chemicals

same

Weetal

5 yrs.

joint project

Corning Glass

Participation in Polymery 74 Conference

Berrezin

Symposium on Production and Properties of Immobilized Enzymes

Tsao

NAME OF TASK OR SUB-TASK

PROJECT NO.

PROJECT TITLE Enzyme Applications

PROJECT COORDINATOR G.T. Tsao, I. Berezin & K.A. Kalunyante

Technology of Enzymatic Cleavages

5.1 Production of sugar from cellulose AND COOPERATING INSTITUTIONS L.S. Losyakova Wilke and Bassham

NAME OF PARTICIPANTS TASK

DURATION OF DATE AND

FORMS OF COOPERATION

EXPECTED

joint project

joint project

5.2 Fermentable sugars from agricultural wastes

Inst. of Biosyn.

U. Cal. Berkeley

of Protein Sub.

L.S. Losyakova

Burnet and Lee

5 yrs.

5.3 Enzyme production of milk substitutes

5 yrs.

joint project

RESULTS

RESULTS

LNSE OF 100798A000400100011-1

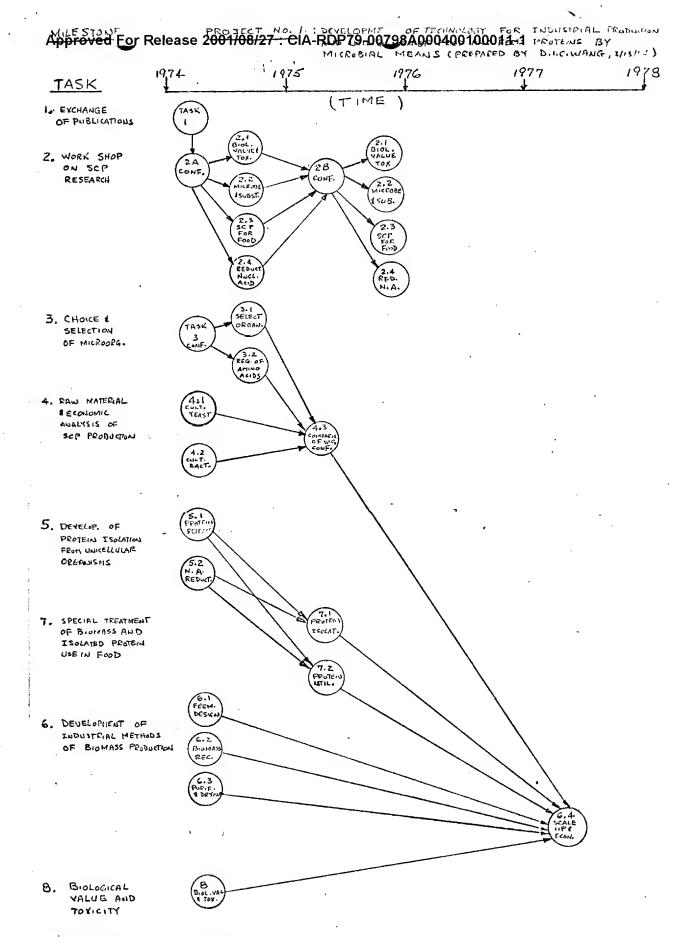
Approved For Release 2001/08/27

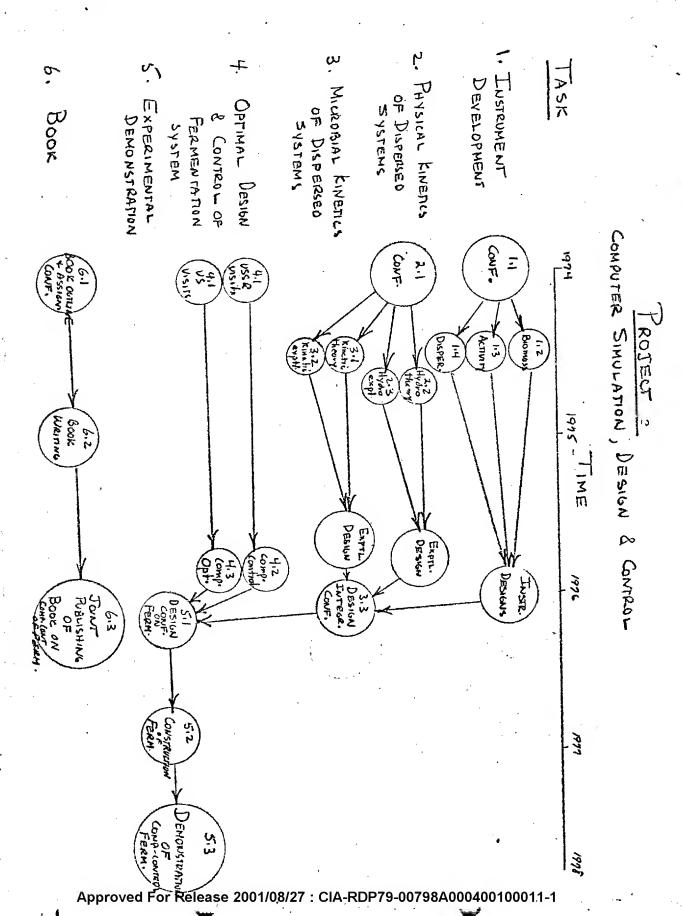
PROJECT COORDINATORS Dr. A. Heimpel, USDA, USA and Dr. Olga A. Alioshina

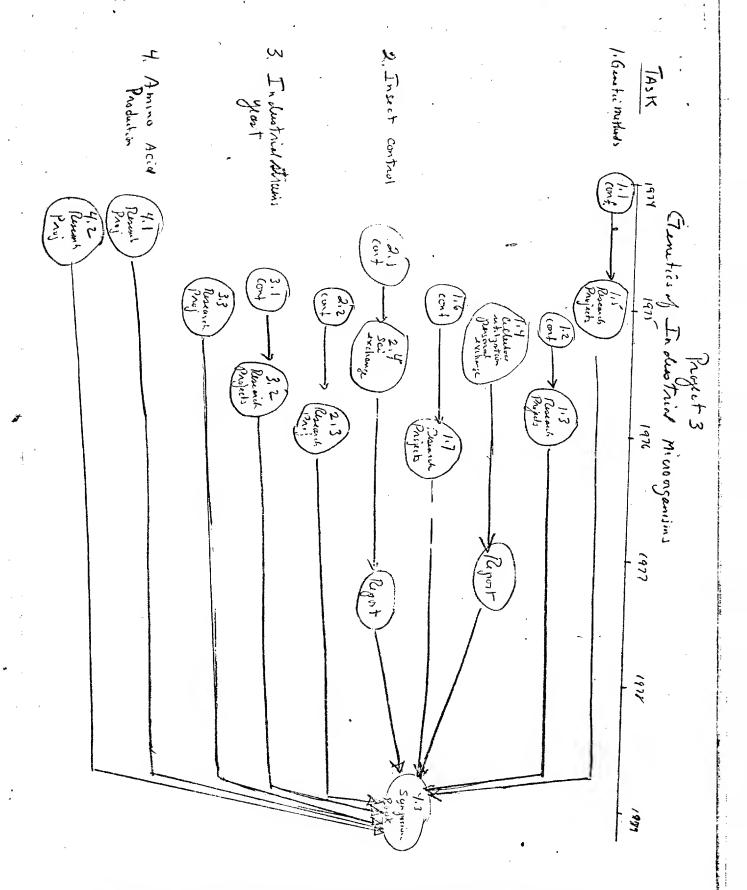
Approved:For	Release	: ל <u>2/</u> 2001/08	CIA-RDP79-	-00798A∰04	4 0 01	09011-1
					Sporu	00011-1 ONULIBER
Final meeting to prepare report	Second work planning meeting on problems	Research on survey & basic	Working planning meetings on problems 2 & 3	Exchange of publication & bacterial cultures	Sporulation of Milky Disease Bacteria	MAHE OF TASK OR A SUB-TASK
2	=		=	N. Acad. Armenian, USSR, Kiev, Mos- cow	se Bacteria	NAME OF FARTICIPANTS AND COOPERATING INSTITUTIONS U.S.S.R. U.S.
All previous participants (4 days)	Ξ	2	" + other parti- cipants (3 days)	Cornell Exp. St. Geneva, N.Y. ARS, Beltsville, Md.		ANTS TUTIONS U.S.
Early Spring 1978	Spring 1977	January 1975 - 1976	Iate Fall 1974	Start 7/74 continual exchange		DATE AND DURATION OF TASK
Meeting in US	Meeting in USSR 8-10 US 8-10 USSR	Cooperative Re- search, Correspond- ence	Meeting in US 6-7 US 6-7 USSR	Exchange of cultures and literature		FORMS OF COOPERATION
Prepare i report	Plan futı program	Partial s lation po bly succe method	Plan coop tive prop	Establish virulent strains 1 further v		EXPECTI

PROJECT NO.

PROJECT COORDINATIONS Dr. A. Heimpel, USDA, USA and Dr. THOJECT TITLE Microbiological Control of Pests of Agricultural Crops Olga A. Alioshina







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Project 1

TOTAL BUDGET ESTIMATE FIVE YEARS WITH PRIORITY

Development of Technology for Industrial Production and Utilization of Food and Feed Proteins by Microbial Means, Including Research Into Different Aspects of Toxicity and Biological Value

Task	Type of Task	Starting Date Duration	First	Second	Third
Number		of Task	Priority	Priority	Priority
		·	Estimated	Estimated	Estimated
			Budget	Budget	Budget
_		•	(\$)	(\$)	(\$)
1	Clerical	July, 1974 5 Years	\$50 0	\$2000	\$2000
2A ,	Conference	July, 1974 3 Days	\$50 00	\$900 0	\$9000
2B	Conference	Sept., 1974 3 Days		\$9000	\$9000
3.2	Conference	Sept., 1974 1 Day	\$ 10 00	\$1000	\$1000
4.1	Res. & Dev.	July, 1974 2 to 3 Years	\$50,000	\$110,00 0	\$250,000
4.2	Res. & Dev.	July, 1974 2 to 3 Years	\$50,000	\$110,00 0	\$250 ,0 00
4.3	Conference	Sept., 1975 1 Week		\$2000	\$2000 ,
5.1	Res. & Dev.	July, 1974 2 to 3 Years	\$30,000	\$80,000	\$160,000
5.2	Res. & Dev.	inly, 1974 2 to 3 Years	\$30,000	\$80,000	\$120,000
6.1	Res. & Dev.	July, 1974 2 to 4 Years	\$50,000	\$100,000	\$250,000
6.2	Res. & Dev.	July, 1974 2 to 3 Years		\$80,000	\$1 00, 000
6.3	Res. & Dev.	Tuly, 1974 2 to 3 Years		\$100,000	\$200,000
6.4	Workshop	Sept., 1974 2 Months		\$20,000	\$35,000
7.1	Res. & Dev.	July, 1975 2 to 3 Years		\$80,000	\$80,000
7.2	Res. & Dev.	July, 1975 2 to 3 Years		\$80,0 00	\$80,000
8 ***	Res. & Dev.	July, 1974 3 to 5 Years	\$40,000	\$15 0, 000	\$450,00 0

TOTAL FOR FIVE YEARS

\$256,500 \$1,013,000 \$1,998,000 (1st Priority) (2nd Priority) (3rd Priority)

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BUDGET TIMING OVER FIVE YEARS

Project No. 1

FIRST PRIORITY

ısk No.	1st Year	2nd Year	3rd Year	4th Year	5th Year	Subtotal for 5 Years
1	\$500	0	0	0 .	0	\$500
2A •	\$5000	0	0	0	0	\$5000
2B	0	. 0	0	0	0	0
3.2	1.000	-	_		· · -	\$10 00
4.1		25,000	-	_		50,000
4.2	25,000	25,000		*_	- ".	50,0 00
5.1	20,000	10,000		_	1000	30,000
5.2	20,000	10,000	_	<u>-</u>	-	30,000
6.1	30,000	20,000	<u> </u>		-	50,000
6.2	_	- <i>,</i>	_	-	- ·	0
6.3	· - ·	.	- .	-	_	0
6.4		* **	_	_		0
7.1	_		·	- -	•••	0
7.2	-	_	_	-	· ·	, o
8	20,000	20,000	-	-	. -	40,000
Total	\$146,500	\$110,000	0	0	0	\$256,500

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BUDGET TIMING OVER FIVE YEARS

Project No. 1

SECOND PRIORITY

Task No.	1st Year	2nd Year	3rd Year	4th Year	5th Year	Subtotal for 5 Years
1	\$1000	\$500	\$500	_	-	\$2000
2A .	\$9000	_	<u>.</u>	. - .	-	\$90 00
2B	_	\$9000	-	-	-	\$9000
3.2	\$1000	<u>-</u>	-	_ -	-	\$100 0
4.1	\$55,000	\$55,000	-	-	-	\$110, 0 00
4.2	\$55,000	\$55,000	-	-	-	\$110,000
4.3	-	\$2000	-	-	-	\$2000
5.1	\$35,000	\$45,000	-	-	-	\$80,000
5.2	\$30,000	\$50,000	_ `	-	-	\$80,000
6.1.	\$45,000	\$55 ,0 00	-	-	-	\$100, 0 00
6.2	\$40,000	\$40 ,0 00	-	-	· -	\$80,000
6.3	\$45,000	\$55,000	-	-	-	\$100,000
6.4	-	_	\$20, 000	-	· -	\$20, 000
7.1	*-	\$40,000	\$4 0, 000	-	-	\$80,000
7.2	-	\$40,000	\$40,000	-	-	\$80,000
8	\$50, 000	\$50,000	\$50,000	-	- 0	\$150 ,00 0
4/4						
Total	\$366 ,0 00	\$496 ,50 0	\$155,500	-	-	\$1,013,000

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BUDGET TIMING OVER FIVE YEARS Project No. 1

THIRD PRIORITY

sk No.	1st Year	2nd Year	3rd Year	4th Year	5th Year	Subtotal for 5 Years
	÷1000	\$500	\$500	_	-1 ->	\$2000
1 .	\$1000	-	_	_	-	\$90 00
2A	\$90 00	\$90 00	_	_	_	\$9000
2B .	<u>-</u>	-	_	_	-	\$1000
3.2	\$1000 \$100,000	\$100,000	\$50,000	_	_	\$250,000
4.1	\$100,000 \$100,000	\$100,000	\$50,000	_	-	\$250,000
4.2	\$ 100, 000	\$2000	_			\$2000
4.3	- ^ \$60,000	\$70,000	\$30,000	_	-	\$16 0,000
5.1	\$40,000	\$50,000	\$30,000	-	-	\$120,000
5.2	; \$50, 000	\$60,000	\$150,000	_	-	\$250,000
6.1	\$ 40, 000	\$50,000	\$10,000	_	_	\$100,000
6.2	\$80,000	\$80,000	\$40,000	_	_	\$200,000
6.3	-	-	\$35,000	_	_	\$35,000
6.4	_	\$40,000	\$40,000			\$80,000
7.1	_	\$40,000	\$40,000	_	-	\$80,000
7.2 8	\$50, 000	\$70,000	\$110,000	\$110,000	\$120,000	\$450,000
Total	\$531,000	\$671,500	\$565,500	\$110, 000	\$120,000	\$1,998,000

Approved For Release 2001/08/27: CIA-RDP79-00298A000400100011-1 FIVE YEAR PLANNING FOR PROJECT NO. 2

"Engineering Research and Development of Equipment and Methods for the Computerized Simulation, Design and Control of Processes for Microbial Technology"

> Project Coordinators: Dr. Shamil Yenikeyev Dr. Arthur E. Humphrey

Task No.	Type of Task St	tarting Date	Duration		2nd Priority	<u>3rd</u> yPriority
1.1 1.2 1.3 1.4	Conference Research Research Research	July 1974 July 1974 July 1974 July 1974	1 week 2 yrs. 2 yrs. 2 yrs.	10,000 130,000 USSR		
2.1 2.2 2.3	Conference Research Research	Sept. 1974 Jan. 1974 Jan. 1974	1 week 2 yrs. 2 yrs.	5,000 USSR	65,000	
3.1 3.2 3.3	Research Research Conference	Jan. 1974 Jan. 1974 July 1976	2 yrs. 2 yrs. 1 mo.	USSR 10,000	65,000	
4.1	2 Exchange Visits	1975-1976	1 yr.		24,000	• .
4.2 4.3	Research Research	July 1974 July 1974	2 yrs. 2 yrs.	180,000	180,000	180,000 180,000
5.1 5.2	Conference Research (consultation)	Fall 1976 July 1976	2 weeks 1 yr.	10,000 USSR	5,000	
5.3	Consultation	Summer 1977	3 nos.	USSR	10,000	
6.1 6.2	Conference Conference &	Fall 1974	2 weeks	•	~	10,000
6.3	Consultation Consultation & Publishing	Fall 1974 Summer 1976	2 yrs. 3 mos.			50,000 10,000
				345,000.	349,000.	430,000.
		CUMULATIVE T	OTALS	345,000.	694,000.	1,124,000.

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VENT	EVENT NAME	ESTIMATED COST ¹	PRIORITIES HOH	PRIORITIES WB
1	3rd Meeting Working Group			
2.	Conference	\$7,000	A	
3	Conference	\$6,000 ·	A	
4	Research Projects	\$75,000-\$150,000	B Lower C Higher	} per De Benem
5	Research Projects	\$40,000	В	
6	Annual Conference	\$15,000	С	
7	Research Projects	\$75,000-\$150,000	A Lower C Higher	
8	Exchange Personnel	\$75, 000	В	
9	Conference	\$7, 000	В	
10 .	Research Projects	\$75,000-\$150,000	B Lower C Higher	•
11	Workshop	\$7,000	A	
1.2	Conference	\$5,000	В	
13	Research Projects	\$75,000-\$150,000	B Lower C Higher	
14	Research Projects	\$20,000	С	
15	Conference	\$5, 000	С	
16	Conference	\$5,000	В	
17	Research Projects	\$25,000-\$50,000	B. Ripa	····
18	Research Projects	\$50,000-\$100,000	A Lower C Higher	
19	Exchange Personnel	\$40,000	В	
20	Conference	\$4,000	С	
21	Research Projects	\$25,000-\$50,000	A Lower B Higher	:
22	Research Projects	\$50,000-\$100,000	A Lower C Higher	:
23	Exchange Personnel	\$40,000	В	
24		\$4,000 elease 2001/08/27 : CIA-RDP7		100011-1
25	Symposium	\$30,000	A	

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Squibb & Sons, Inc.

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Box 4000 eton, New Jersey 08540 Cable: ERSQUIBB NYK

February 26, 1974

Dr. J. M. Leise Senior Staff Associate to the Deputy Assistant Director for Research National Science Foundation Washington, D.C. 20550

Dear Josh:

I have reviewed the priorities set by Harlyn Halvorson on the various events under Project 3 and am in complete accord with the ratings that he has established with one exception. Under event 4, I recommend we set 3 levels of operation for the three possible budgets A - \$30,000, B - \$75,000, and C-\$150,000. I trust that you will notify us at an early date at what budgetary level we can expect to proceed.

With best wishes,

Sincerely yours,

William E. Brown

cc: Professor H. O. Halvorson

Dean A. E. Humphrey

PLA
BUDGET
4 BU
2
PROJECT NO.
띪

		,	160,000	160,000	140,000	. 460К	130K	140K
	1978		160	. 16(. 14	46	13	14
	1977	~	140,000	140,000	120,000	400K	120K	120K
EAR	1976		120,000	120,000	100,000	340K	110K	100K
FISCAL YEAR	1975		100,00	100,000	80,000	280K	100K	80K
	1974	\$10,000	\$80,000	\$80,000	000*09\$	\$230,000	\$90,000	
	PROJECTS	(1) Polymery 74 Deroject 4, Task 6	\$\frac{\phi}{0}\$ • Fermentable sugar • Iowa State • Project 4, Task 5.2	(a) Sugar from cellulose to U. Cal. Berkeley Droject 4, Task 5.1	94) 2 Acoustic Imaging Project 4, Task 4.2	First Priority Group	(45) C Cleavage Reversal C Corning Glass C Project 4, Task 5,4	006) 000 Project 4, Task 5.3 001000 1.1

U.S.-U.S.S.R. Joint Commission on Scientific and Technical Cooperation

U.S. WORKING GROUP ON MICROBIOLOGY

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215-594/7084

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Dr. George Tsao
Program Director
Division of Advanced Technology
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National Science Foundation
Washington, D.C. 20550

Dr. Daniel I. C. Wang Department of Nutrition and Food Science Massachusetts Institute of Technology Cambridge, Massachusetts 02139

3/15/74

U.S.-U.S.S.R. Joint Commission on Scientific and Technical Cooperation

U.S. WORKING GROUP ON MICROBIOLOGY

U.S. Project Coordinators

Chairman

Dr. Joshua M. Leise
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Washington, D.C. 20550

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RCA TELEX: 24521 NASCF UR Western Union: 89-2438 NATSCIFOUN

Project Coordinators

1. Development of Technology for Industrial Production of Food and Feed Proteins by Microbial Means

> Dr. Daniel I. C. Wang Department of Nutrition and Food Science Massachusetts Institute of Technology Cambridge, Massachusetts 02139

617-253/2126

2. Engineering Research and Development of Instrumentation and Methods for the Computerized Simulation, Design and Control of Processes for Microbial Technology

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Where available, telex or TWX service identified; otherwise only office telephone numbers listed TVA CIA-RDP79-00798A000400100011-1

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- 2 -

3. Molecular Biology of Industrial Microorganisms

Dr. Harlyn O. Halvorson Professor of Molecular Biology Brandeis University Waltham, Massachusetts 02154 617-647/2431

4. Development of Methods of Producing and Using Enzymes and Other Biologically Active Substances for Agriculture

Dr. George Tsao
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Division of Advanced
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5. Microbiological Control of Pests of Agricultural Crops

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Beltsville, Maryland 20704

301-344/2380

3/25/74

U.S.-U.S.S.R. Joint Commission on Scientific and Technical Cooperation

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